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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,455	07/23/2004	Ki-Wan Jang	11281-044-999	3693
20583	7590	03/17/2006	EXAMINER	
JONES DAY			WOOD, KEVIN S	
222 EAST 41ST ST			ART UNIT	
NEW YORK, NY 10017			PAPER NUMBER	

2874

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/502,455

Applicant(s)

JANG ET AL.

Examiner

Kevin S. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0704, 1004, 0105, 1005, 0306</u> | 6) <input type="checkbox"/> Other: ____.  |

## NON-FINAL REJECTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,578,387 to Tankala in view of U.S. Patent Application Publication No. 2003/0221459 to Walczak in further view of U.S. Patent No. 6,732,551 to Tennent et al.

Referring to claims 1 and 17, the Tankala reference discloses A method of manufacturing an optical fiber preform using MCVD (Modified Chemical Vapor Deposition) which forms a clad and a core in a deposition tube by using a flame providing unit reciprocating along an axial direction of the deposition tube, the method repeatedly executing the following process with varying composition of soot generation gas according to a refractive index profile, in which the process comprises the steps of: (a) forming a soot layer having pores on an inner surface of the deposition tube by inducing soot generation reaction at a temperature lower than a soot sintering temperature with putting soot generation gas in a halide group together with oxygen gas into the deposition tube; (b) removing hydroxyl groups (OH) existing in the soot layer with keeping the pores by putting dehydration gas into the deposition tube; and (d) sintering the soot layer by heating the deposition tube at a temperature above the soot sintering temperature. See Fig. 1 through Fig. 4 of the reference along with their respective portions of the specification. The Tankala reference does not appear to specifically disclose a step of removing chlorine impurities from the soot layer by putting dechlorination gas into the deposition tube. The Walczak reference discloses a method of making an optical fiber using an MCVD process having a step of removing chlorine by introducing chlorine stripping gas such as fluorine or oxygen into the optical fiber. See paragraphs [0057] through [0058]. The Tennet et al. reference discloses a method of making an optical fiber free from chlorine impurities because chlorine has been found to reduce transmission efficiency in optical fibers. See col. 2, lines 1-17. Since the Tankala reference, the Walczak reference and the Tennet et al. reference are all from

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the same field of endeavor, the purpose of limiting the negative effects of chlorine impurities taught by the Tennet et al. reference would have been recognized within the pertinent art of the Tankala reference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the step for removing chlorine from an optical fibers taught by the Walczak reference within the method of producing an optical fiber taught by the Tankala reference, for the purpose of reducing the unwanted losses associated with having chlorine in the cladding and/or core of an optical fiber.

Referring to claims 2 and 3, the Tanakala reference discloses forming the soot layer at a temperature between 1300°C to 1800°C, and preferably about 1600°C. See col. 2, lines 40 through lines 45.

Referring to claims 4-6, the Tanakala reference discloses drying step is performed at a temperature between 600°C to 1200°C. See col. 3, lines 36-38. The Tanakala reference also discloses the sintering temperature to be between 1500°C to 2000°C, and preferably about 1800°C. See col. 3, lines 40-45.

Referring to claims 7, 11 and 15, the Tanakala reference does not appear to specifically disclose that the flame providing unit (torch) moves a rate lower than 700mm/min. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the optical fiber from the method disclosed by the Tanakala reference so that the flame providing unit moves at a rate lower than 700mm/min., since it has been held that where the general conditions of a claim are

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disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Referring to claim 8, the Tanakala reference discloses the dehydration gas is chlorine gas mixed with an inert carrier gas. See col. 3, lines 31-34.

Referring to claims 9, 10 and 12, the Walczak reference discloses that the step of removing the chlorine using a dechlorination gas (oxygen or fluorine) is performed at a temperature range of 900°C to 1300°C. See paragraphs [0057] to paragraph [0058] of the Walczak reference.

Referring to claim 13, the Tanakala reference discloses gas for making oxidation condition is put into the deposition tube together with a dehydration gas in order to sinter the soot layer and remove residual hydroxyl groups in the soot layer. See col. 5, line 60 through col. 6, line 16.

Referring to claim 14, the Tanakala reference discloses the sintering is preferably performed at 1800°C. See col. 6, lines 7-10.

Referring to claim 16, the Tanakala reference does not appear to specifically disclose that the diameter ratio of the clad and core is determined in the range of 2.0 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the optical fiber from the method disclosed by the Tanakala reference so that the diameter ratio of the clad and the core ( $D/d$ ) is in the range of 2.0 to 2.5, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Referring to claim 17, the Tankala reference in view of the Walczak reference in further view of Tennent et al. reference discloses the claimed optical fiber, except none of the references appear to specifically disclose the peak of hydroxyl group absorption loss at 1385nm is less than 0.33dB/Km, an optical loss at 1310nm is less than 0.34dB/Km, and an optical loss at 1550nm is 0.20dB/Km. However the patentability of the combination of the references discloses a structure that is identical to that of the claimed invention. It has been held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of obviousness has been established. The properties or functions of the device are presumed inherent. See MPEP section 2112.01.

#### ***Allowable Subject Matter***

4. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Kevin S. Wood". The signature is written in a cursive, flowing style.

Kevin S. Wood  
Patent Examiner